

ABSTRACT

Devices and methods utilizing dielectric pumping and variable dielectric pumping to move fluids through microchannels. Two fluids having dissimilar dielectric constants form an interface that is positioned between two electrodes in order to move the interface and therefore the fluids. Dielectric pumping and variable dielectric pumping may be used to move fluids in miniaturized analytical packages containing microchannels in which forces created by surface tension predominate over the gravitational force.